

EDITORIAL

Patterns of Healthcare Use for Diarrhoea at Sites in Six Countries

There is an important need for epidemiological studies on enteric diseases for which vaccines are available or under development, including shigellosis, typhoid fever, cholera, and rotavirus diarrhoea. Traditionally, the epidemiology of diarrhoeal diseases has been explored in longitudinal, prospective community-based surveys. As long as families can be reached at home and interviews are carefully conducted, prospective community-based studies provide a picture of the spectrum of disease ranging from mild to severe; however, this type of study is increasingly seen as costly and logistically difficult, especially in large populations. For this reason, hospital-based or clinic-based surveillance has been advocated as a more affordable method of monitoring the epidemiology of diarrhoeal disease. It is thought that health facility-based surveillance is likely to provide information on more severe disease, but it is not known to what extent families with diarrhoea make use of local healthcare providers and how this varies in different locations.

These limitations of health facility-based surveillance have led to the development of different types of studies that will allow investigators to understand local patterns of healthcare use for diarrhoeal disease, including the proportion of individuals with diarrhoea who will seek care at a health facility. Six papers in this issue of the Journal report on a total of eight studies that explore patterns of use of traditional and non-traditional healthcare services when a family member has diarrhoea. The target populations for these studies were in the range of 50,000 to 500,000. Altogether, the papers report on three types of studies: a one-time census survey of all households in the study area; a rapid cluster survey of a limited number of representative households; and an anthropological interview of selected families and healthcare practitioners.

In the census survey, investigators visit all households in the study population once. The census survey is designed to enumerate the population, to record episodes of diarrhoea in the previous month, and to learn where families sought treatment for diarrhoea. Two census surveys are reported in this issue, one from a slum area of Kolkata, India (1) and one from a slum area of Jakarta, Indonesia (2). Both of these studies were conducted in planning for pilot projects for vaccination against either cholera or typhoid. Healthcare-use patterns were analyzed for those individuals with diarrhoea in the month preceding the census survey—428 (0.7%) of 57,099 persons in Kolkata, India and 8,074 (5%) of 160,261 persons in Jakarta, Indonesia. The proportion of individuals reporting diarrhoea in Kolkata was lower because the census survey was conducted in the low-prevalence season, whereas the Jakarta survey was carried out during the peak diarrhoea season.

The rapid cluster survey uses a simple sampling method (3) to select a small but reasonably representative sample of households for interview to assess healthcare-use patterns for diarrhoea. A rapid cluster survey questionnaire developed by the International Vaccine Institute (IVI) for proposed *Shigella* disease-burden study sites is published in this issue as an annex to the study from China (4). The questionnaire asks about healthcare use for family members who had diarrhoea in the previous month and, where no family member has experienced diarrhoea in the past month, the respondent is asked how the family would respond to a hypothetical vignette concerning diarrhoea. Three rapid cluster surveys using the IVI questionnaire are reported in this issue, and these were conducted in China (4), Thailand (5), and Viet Nam (6). Another rapid cluster survey questionnaire has been developed by the World Health Organization (WHO) for proposed rotavirus disease-burden study sites (7). Two rapid cluster surveys using the WHO questionnaire are reported in this issue, one from a rural district and one from an urban district in Ghana (8).

The anthropological survey consists of qualitative interviews of selected household heads and healthcare

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providers. One such survey from Viet Nam (6) is reported in this issue of the Journal, and it was conducted among the same population as a rapid cluster survey in preparation for *Shigella* surveillance. The qualitative interviews provide in-depth understanding of the constraints impacting on the various healthcare choices that families face when someone has diarrhoea, and they also expand our appreciation of the role of traditional medicine in Viet Nameese society. Others have reported similar findings from rural Viet Nam: a random sample survey found that the poor delay and minimize healthcare-seeking, especially of more expensive hospital-based services, and that poor households may reduce essential consumption, sell assets, or incur debt to meet healthcare costs (9).

To conduct any of the three types of healthcare-use surveys, the investigators first need to become familiar with the healthcare infrastructure, both formal and informal, and it is some of these data which are the most interesting to compare. We learn from the six papers in this issue that the primary healthcare centre remains the core public-sector source of healthcare in most of these settings, while the government hospital is the core public-sector resource in Kolkata. However, the number of individuals served by one primary healthcare centre varies dramatically from some 500 persons in rural China to 4,000 in rural Thailand, 14,000 in Viet Nam, 21,500 in urban Indonesia, and 24,000 in Ghana. In addition, we learn that private-sector services, ranging from single physicians to hospitals, are available in all settings. In all the study sites, it is reported that both public and private sectors apply some form of user-fees. In the public sector, this might be a fee for service access or a fee for all medicines, or selected medicines; fees are reported to be somewhat higher in the private sector.

The information from the healthcare-use survey can give an idea of how commonly the various local healthcare options are being used, and there were striking differences from site to site. For children aged less than five years, public-sector health facilities (hospitals and clinics) were the healthcare option of choice for 85% in China, 64% in Thailand, 48% in Indonesia, 29% in urban Ghana, 27% in Viet Nam, 20% in rural Ghana, and 14% in India. If both private- and public-sector health facilities are included, the proportion of children aged less than five years did not change in China, but

rose to 71% in Thailand, 70% in Indonesia, 64% in India, 52% in urban Ghana, 42% in Viet Nam, and 36% in rural Ghana. In India, Indonesia, Thailand, and Viet Nam, the proportion of adults with diarrhoea seeking care at health facilities was lower than for children aged less than five years. In Viet Nam, most families (48% of children aged <5 years and 52% of adults) reported that they would seek care at a pharmacy. This is of particular interest since pharmacies may provide antibiotics, and it is known that overuse and misuse of antibiotics contribute to drug-resistance patterns for shigellosis, cholera, and typhoid.

Ideally, surveys on patterns of healthcare use should be conducted prior to initiating disease surveillance so that the survey findings can guide which parts of the healthcare system might best contribute. Since these surveys assess healthcare use for diarrhoea occurring in the month prior to the survey, it would be more efficient to schedule this type of survey during the peak diarrhoea season. If it is thought that healthcare-use patterns may differ by season, repeat surveys may be warranted. Information from the census surveys in India and Indonesia reported actual healthcare-seeking behaviour. The rapid cluster surveys in Ghana found that responses to hypothetical scenarios did not match real treatment choices; thus, real responses are the main data reported. The rapid cluster surveys in China, Thailand, and Viet Nam relied mainly on responses to hypothetical scenarios about family members with diarrhoea. In China and Thailand, cluster survey responses concerning real and hypothetical adult diarrhoea patients could be compared, and it is reassuring to find that these were not significantly different. In Viet Nam, qualitative interviews of selected individuals who had confirmed dysentery were generally consistent with the patterns reported in the cluster survey. Further studies about local healthcare-use patterns would be helpful, especially in preparation for diarrhoeal disease-burden studies or pilot vaccine-introduction projects that will use passive surveillance to estimate disease incidence.

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